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Korean EFL Learners' Interlanguage Speech Intelligibility Benefit: Focusing on English Phrasal Verbs

한국인 영어 학습자들의 중간언어 발음이개도 양상 연구: 영어 구동사를 중심으로

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Korean EFL Learners' Interlanguage Speech Intelligibility Benefit: Focusing on English Phrasal Verbs

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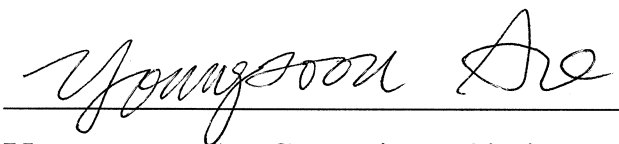

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Abstract

Korean EFL Learners' Interlanguage Speech Intelligibility Benefit:

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The phenomenon that non-native talkers' speech is as intelligible as or even more intelligible than native talkers' speech to non-native listeners who share the same L1 is referred to as Interlanguage Speech Intelligibility Benefit (ISIB) (Bent & Bradlow, 2003). Later, ISIB has been further developed into two refined types: ISIB-T (ISIB for *Talkers*) and ISIB-L (ISIB for *Listeners*) (Hayes-Harb, Smith, Bent, & Bradlow, 2008). Although there have been a majority of studies on ISIB, the results have been inconsistent. While some studies found evidence for ISIB, others found no or only limited evidence.

Such mixed results suggest that a variety of language backgrounds may influence the effect of ISIB. This study, therefore, investigated if more definite evidence for ISIB was found in Korean EFL learners. In order to figure out more clearly the patterns of intelligibility, the main purpose of this research was to

investigate ISIB-T and ISIB-L as separate phenomena.

Among phrasal verbs with reduced vowels, 10 phrasal verbs with high frequency were selected as stimuli in a transcription task. Three talkers, consisting of one native English talker, one non-native Korean talker of high proficiency and one non-native Korean talker of low proficiency, were recruited for speech samples. Three groups of listeners, composed of native English listeners, non-native Korean listeners of high proficiency, and non-native Korean listeners of low proficiency, participated in this study. To explore the influence of non-native talker and listener proficiency levels on ISIB-T and ISIB-L, results were separately analyzed by the proficiency levels of the talkers and the listeners in the one-way ANOVA.

The results revealed that the native English talker's speech was more intelligible to the non-native Korean listeners than the non-native Korean talker's speech (i.e., no ISIB-T effect). In addition, the non-native Korean talkers' speech was more intelligible to the native English listeners than to the non-native Korean listeners (i.e., no ISIB-L effect). When proficiency levels were taken into account, it was found that such results were not influenced by the proficiency levels of the non-native Korean talkers and listeners.

The findings suggest that Korean EFL learners have not taken advantage of interlanguage benefit. However, considering that the non-native Korean listeners showed no significant differences from the native English listeners, it

can be expected that Korean EFL learners can benefit from interlanguage by improving their L2 proficiency levels. Phrasal verbs with reduced vowels, therefore, should be explicitly instructed to Korean EFL learners and abundant opportunities to practice them need to be provided in order to improve mutual intelligibility among non-native speakers as well as intelligibility between native speakers and non-native speakers.

Keywords: intelligibility, ISIB, ISIB-T, ISIB-L, prosody, phrasal verbs, reduced vowels, L2 proficiency, EFL Korean learners

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Chapter 1. Introduction

This chapter presents the significance and purpose of the present study. Section 1.1 provides an overview of the background and purpose of the study. The main concerns and research questions of the thesis are described in Section 1.2. Section 1.3 outlines the organization of the thesis.

1.1 Background and Purpose of the Study

The two frequently cited L2 perceptional models are Speech Learning Model (SLM) (Flege, 1995) and Perceptual Assimilation Model (PAM) (Best & Tyler, 2007). SLM focused on the production and perception of experienced L2 learners, while PAM was originally designed to explain the perception of native listeners. However, PAM was later expanded to include the perception of the L2 learners (Best & Tyler, 2007), spurring more researchers to conduct studies on L2 perception (Strange & Shafer 2008). Most of these studies have addressed L2 perception on a phonetic level (Francis, Ciocca & Fenn, 2008; Guion, Flege, Akahane- Yamada & Pruitt, 2000; Schmidt, 2007; Strange, 2007), but recently, a growing number of studies are addressing L2 perception on a prosodic level, as suprasegmental features such as intonation, rhythm, and stress, which are said to play a significant role in how well non-native speakers understand speech in L2

(Cutler, 2009; Francis et al., 2008).

In fact, prosodic features have been considered to be a significant component of L2 perception in terms of intelligibility (Chun, Hardison & Pennington, 2008; Hahn, 2004; Kang, Thomson & Moran, 2018; Sereno, Lammers & Jongman, 2016). Intelligibility refers to the extent to that a speaker clearly manages to deliver his or her intended message to the listener (Derwing & Munro, 2015). Under the concept of English as Lingua Franca (Derwing & Munro, 1997) researchers have found it compelling to investigate mutual intelligibility between non-native speakers as well as intelligibility between native and non-native speakers. Researchers have also shown much interest to investigating the extent to which the listeners' knowledge of the non-native speakers' L1 will affect the speakers' intelligibility (Bent & Bradlow, 2003; Derwing & Munro, 1997; Hahn, 2004; Munro, Derwing & Morton, 2006; Stibbard & Lee, 2006). In other words, would a Korean native listener better understand the English speech of a fellow Korean native talker, compared to an American native listener?

In their seminal work, Bent and Bradlow (2003) found that this was indeed the case. Non-native English talkers' speech was as intelligible as or even more intelligible than native talkers' speech to non-native listeners who share the same L1. To explain this phenomenon, Bent and Bradlow (2003) coined the term, "Interlanguage Speech Intelligibility Benefit (ISIB)." In other words, since L2

learners from the same native language background who are in the process of acquisition of a target language share an "interlanguage", they benefit from the interlanguage and thus, find speech by non-native talkers sharing the same L1 more intelligible than native English talkers' speech.

It is notable, however, that there is a variance in how ISIB is defined among researchers. In Bent and Bradlow (2003)'s original definition, - ISIB referred to the phenomenon where non-native listeners found non-native talkers' speech *at least as intelligible as* native talkers' speech. Stibbard and Lee (2006), however, suggested that "it might be argued that the word 'benefit' should be used only to describe cases in which a talker received higher intelligibility scores than another talker, not those cases in which the scores were simply equal" (Stibbard & Lee, 2006, p. 434), questioning the earlier definition of ISIB. The definition advocated by Stibbard and Lee (2006) will be adopted in the present study, so that ISIB will be limited to the case that non-native listeners found non-native talkers' speech *more intelligible* than native talkers' speech.

In addition, some researchers have further refined ISIB into two-subtypes: ISIB-T and ISIB-L (Hayes-Harb et al., 2008). ISIB-T refers to cases where non-native talkers' speech is more intelligible to non-native listeners than native talkers' speech (i.e., ISIB for *talkers*), while ISIB-L concerns cases where non-native talkers' speech is more intelligible to non-native listeners than it is to native listeners (i.e., ISIB for *listeners*). That is, ISIB-T compares the

intelligibility of *non-native listeners for native and non-native talkers*, while ISIB-L compares the intelligibility of *native and non-native listeners for non-native talkers*.

Though there have been a majority of studies on ISIB, only a few studies have explicitly examined ISIB-T and ISIB-L as distinct phenomena and the results have been inconsistent. While some studies found evidence for ISIB (Bent & Bradlow, 2003; Hayes-Harb et al., 2008; Xie & Fowler, 2013), others found no or only partially supporting evidence (Major, Fitzmaurice, Bunta & Balasubramanian, 2002; Munro et al., 2006; Lee & Xue, 2013, Stibbard & Lee, 2006). Discrepancies like these suggest that although language background is the most crucial factor, ISIB is likely mediated by other factors too.

For instance, in relation to ISIB, there have been studies on factors such as familiarity with foreign accents (Major et al., 2002), speakers' acoustic property (Munro et al., 2006), proficiency (Algethami, Ingram & Nguyen, 2011; Bent & Bradlow, 2003; Hayes-Harb et al., 2008; Stibbard & Lee, 2006), and language environment (Xie & Fowler, 2013). Among other things, defnining factors may include L2 proficiency of talkers and listeners (Hayes-Harb et al., 2008). Previous studies have provided evidence that L2 proficiency of talkers and listeners need to be considered important factors that mediate ISIB (Bent & Bradlow, 2003; Hayes-Harb et al., 2008; Stibbard & Lee, 2006).

The current study, therefore, explores ISIB-T and ISIB-L as separate

phenomena by L2 proficiency levels of talkers and listeners, employing phrasal verbs with reduced vowels. Both native and non-native Korea talkers' speech is presented to both native and non-native Korean listeners in order to see if Korean L2 listeners take advantage of the interlanguage in a transcription task, depending on proficiency levels. This study may provide more definite results in ISIB-T and ISIB-L, in terms of proficiency levels in both speakers and listeners.

1.2 Research Questions

The current study was inspired by the following research questions:

Research Question 1
Do Korean EFL listeners find speech by non-native Korean talkers more intelligible than speech by native English talkers? (ISIB-T)

Research Question 2
Do Korean EFL listeners find speech by non-native Korean talkers more intelligible than native English listeners? (ISIB-L)

Research Question 3
Does non-native Korean listeners' L2 proficiency levels have an influence on ISIB-T and ISIB-L?

1.3 Organization of the Thesis

This thesis is composed of 5 chapters. The main concerns and purpose of the current study were presented in Chapter 1. Chapter 2 overviews the theoretical backgrounds and experimental research on the second language speech perception and interlanguage speech intelligibility benefit (ISIB). In addition, research on the intelligibility of English reduced vowels is illustrated. The methodology of this study is described in Chapter 3, which is followed by experimental results and discussion in Chapter 4. Chapter 5 concludes the study with a summary of major findings, pedagogical implications, limitations and suggestions for further studies.

Chapter 2. Literature Review

Chapter 2 introduces theoretical backgrounds of the second language speech perception and Interlanguage Speech Intelligibility Benefit (ISIB) with the subtypes, ISIB-T and ISIB-L. In addition, research of influence of prosodic features such as English reduced vowels on intelligibility is provided.

2.1 Second Language Speech Perception and Intelligibility

The fundamental concept in L2 perception models such as Perceptual Assimilation Model (PAM) and Speech Learning Model (SLM) is that perception and acquisition for L2 is influenced by similarities or differences between L1 and L2. The two models explain the mechanism of acquisition of L1 and L2 sounds at the level of the phonetic categories. More specifically, when phonetic categories of the two languages are close to each other, they are difficult to be acquired because of assimilation between them.

Such nature of the L2 models gives rise to the question as to whether the models of L2 perception can be extended from segmental categories to prosodic patterns. Posing such a question is significant since it is true that prosodic features such as rhythm, stress, pitch, duration, pauses, or intonation have been pointed out as significant to L2 perception, despite controversy on the

contribution of prosody to L2 perception.

On the basis of this theoretical background, more recent research has focused on the prosodic features, particularly, on how prosodic features may contribute to L2 learners' perception in terms of intelligibility (Hahn, 2004; Kang, 2010; Sereno et al., 2016), even though most of the previous studies attempted to evaluate the impact of segments on intelligibility (Bent, Bradlow, & Smith, 2007; Han, Choi, Lim, Lee, 2011; Hayes-Harb et al., 2008; Lee & Xue, 2013; Smith, Hayes-Harb, Bruss, & Harker, 2009; van Wijngaarden, 2001).

For instance, according to the study of Broselow, Hurting and Ringen (1987), native English speakers' perception of Mandarin tone appeared to be affected by the pitch in the intonation system of English. In the same vein, Cutler (2009) applied the models of L2 perception to prosody and found that Dutch listeners used prosodic cues such as stress in a word recognition task of the native language, which was regarded as evidence that the non-native Dutch listeners had greater sensitivity to prosodic goodness than native English listeners.

However, those studies in the field of L2 perception have only focused on intelligibility as a matter of the phonetics or prosody systems of the utterances alone, neglecting the interaction between talker and listener variables. Moreover, while the previous studies have demonstrated that native English listeners find native English talkers more intelligible than non-native talkers in general, they

have not explored whether native or non-native English talkers are more intelligible for non-native listeners. In particular, mutual intelligibility of L2 learners sharing the same language background has not been treated in much detail. Research on L2 speech perception has therefore increasingly moved to focus on the interaction between L2 talker and listener variables.

2.2 The Interlanguage Speech Intelligibility Benefit

This section provides a theoretical description of the concept and theoretical background of Interlanguage Speech Intelligibility Benefit (ISIB), and two subtypes of ISIB, ISIB-T and ISIB-L are introduced.

2.2.1 Research on ISIB

It has recently been observed that native listeners find native talkers' speech more intelligible than non-native talkers' speech (Bent & Bradlow, 2003; Munro, 1998; Smith, Bradlow, & Bent, 2003; van Wijngaarden, 2001). Bent and Bradlow (2003) studied the interaction between talker and listener variables by investigating the intelligibility of native English and non-native listeners from diverse first language backgrounds to native English and non-native talkers' speech with the same and different L1. The listeners of the study were given

spoken sentences by the native English and non-native talkers and asked to dictate them, using English orthography. They found that in contrast to native English listeners who rated highest of native English talkers in intelligibility, non-native listeners rated highest for non-native speakers with the same first language in terms of intelligibility. They called this phenomenon interlanguage speech intelligibility benefit (ISIB).

Though the study of Bent and Bradlow (2003), a monumental one on the ISIB, first explored the effect of interlanguage benefits and concluded that there were effects of ISIB, they did not recognize that ISIB had a subtle and complicated nature and the definition of ISIB should have been more elaborated. So since their study, quite a few studies have been performed to investigate the effect of ISIB in more detail. For example, Stibbard and Lee (2006) experimented with four non-native talkers who were two Koreans and two Saudi Arabians to examine the effect of ISIB. Fifty listeners who were composed of non-native Korean, non-native Saudi Arabian Arabic, and non-native English listeners with mixed first languages other than Korean or Saudi Arabian Arabic. Using a transcription task, hey found that the non-native Korean listeners rated the non-native Korean talkers of high proficiency level to be highest and concluded that for the non-native Korean listeners, the speech of the non-native talkers with the same first language background is more intelligible than that of the native English talkers as well as the non-native talkers with different first

languages.

While Bent and Bradlow (2003) regarded the ISIB as referring to being equal to or more intelligible than perception of native English speech, Stibbard and Lee (2006) reformulated the definition of ISIB by proposing that it should be applied only to the case that non-native talkers' speech is more intelligible to non-native listeners than native English talkers' speech. Furthermore, it is worth noting that these two studies were performed in English speaking countries, US and UK, respectively. In English speaking countries, it is possible to be exposed to the non-native accented English and this can influence intelligibility of each other's speeches. Therefore, it is plausible to say that the studies did not yield adequate evidence for ISIB on non-native EFL learners.

In addition, though the two studies above provided evidence for ISIB, the results were still not robust. Though Munro et al. (2006) found that non-native Japanese talkers' speech was more intelligible to non-native Japanese listeners than to native English listeners, they also pointed out that group differences with respect to ISIB tend to be limited to only some non-native talkers and listeners. That is, the effect of ISIB held only for non-native Japanese talkers and listeners and no evidence of ISIB was not found for Cantonese talkers and listeners. Smith et al. (2009) also revealed that native English talkers' speech was more intelligible to non-native German listeners than non-native German talkers' speech for the English-final voicing contrast. They did not find evidence

supporting the effect of ISIB.

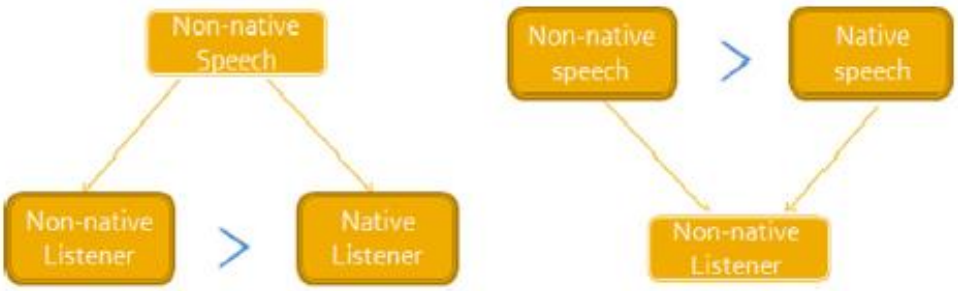
These two studies showed the contradictory results from the previous studies supporting the ISIB effect. However, they had limitations given that they did not take account into L2 proficiency of talkers and listeners. In this regard, the research of Algethami et al. (2011) has a significant meaning. In the study of Algethami et al. (2011), participants were 19 native Australian English and 19 non-native Saudi Arabian as listeners in addition to 3 native Australian English and 10 Saudi Arabian as talkers. The talkers were divided into two groups: high proficiency and low proficiency levels. The result of the study indicated that the effect of ISIB was very small. Though Saudi Arabia talkers' speech was intelligible to the listeners who shared the same fist language, it was not significant. These patterns were not influenced by proficiency levels of talkers and listeners. Rather, just as in the case of the study of Munro et al. (2006) the phonetic properties of L2 speech itself were strong determinants of how it was perceived regardless of the listeners' native languages.

2.2.2 Research on ISIB-T and ISIB-L

Though Stibbard and Lee (2006) attempted to refine ISIB by reformulating its definition, ISIB still remained a rather rough concept, which may have resulted in the insistent results of the previous studies. As such

inconsistent findings reinforced subtle and complicated nature of ISIB, it was proposed that ISIB should be divided into two subtypes and explored respectively since they had distinctive features and were expected to bring about the different results. It was not until in the study of Hayes-Harb et al. (2008) that the nature was recognized.

In the first attempt to separate the two subtypes from the ISIB, Hayes-Harb et al. (2008) explored the ISIB effect for non-native Mandarin learners with word final stop voicing, taking account into L2 proficiency of the talkers and listeners. They found that non-native Mandarin talkers' speech was not more intelligible than native English talkers' speech to any of non-native Mandarin listeners regardless of their proficiency levels. They also found that the speech by low proficient non-native Mandarin talkers was intelligible only to the low proficient nonnative listeners. Based on these results, they further developed two refined types of ISIB: ISIB-L and ISIB-T. As shown in Figure 2.1, they defined the ISIB-T to refer to the case where non-native talkers' speech was more intelligible to non-native listeners' than native English talkers' speech while the ISIB-L was referred to as the cases where non-native talkers' speech was more intelligible to non-native listeners than to native English listeners.



ISIB-L ISIB-T

Figure 2.1 Two Types of Interlanguage Speech Intelligibility Benefit
Note. Cited from Xie and Flower (2013), P. 370

Despite a limitation of their study that experimental conditions were very constrained, Hayes-Harb et al. (2008) contributed to the following ISIB research by shedding light on the subtle nature of ISIB and refining the subtypes of ISIB.

One of the two subtypes of ISIB, ISIB-L, was explored in the study of Lee and Xue (2013). They experimented with non-native Chinese talkers with high proficiency and low proficiency and four groups of listeners: non-native Korean listeners, non-native Japanese listeners, non-native Chinese listeners and native English listeners, using English liquids /l/ and /r/ in initial and final positions respectively. While there was no ISIB-L evidence for initial /l/, the results of the rest three target sounds were inconsistent with talkers' proficiency. Though this study had an emphasis on the role of proficiency on ISIB, it was not sufficient to support the effect of ISIB. It is because only talkers' proficiency levels, not listeners' proficiency levels, were taken account on and it investigated

the ISIB-L, not ISIB-T.

In this vein, a study by Xue and Flower (2013) was one of the studies drawing attention. The study involved both ISIB-T and ISIB-L for non-native Mandarin talkers and listeners, focusing on the role of language environment and proficiency. Three listener groups were native English listeners, non-native Mandarin listeners in the US (M-US) and non-native Mandarin listeners in Beijing, China (M-BJ). Both groups of non-native listeners outperformed native English listeners in a transcription task, showing evidence for ISIB-L. However, only the accuracy of M-BJ was higher for both non-native Mandarin talkers than for native English talkers, showing limited evidence for ISIB-T.

It is important to note that evidence for ISIB-T was not found in M-US. They attributed this phenomenon to the increased time of exposure to native-accented English, which made the benefit of interlanguage shared by the same L1 diminished. Thus, the study implies that factors other than L1 such as language environment and L2 proficiency needed to be considered in ISIB research.

The studies reviewed here provided insights into the subtle and complicated nature of the ISIB, which is relevant to several factors other than the first language such as proficiency and language environments. It seems that those factors may affect the results of the studies and there remain several aspects of the ISIB about which relatively little is known. Therefore, more

refined materials and methodology should be employed to figure out if and how non-native talkers and listeners take advantage of interlanguage for the better intelligibility effect.

2.3 Intelligibility in English Phrasal Verbs with Reduced Vowels

Phrasal verbs are one kind of multi-word lexical verbs which are composed of more than two words. According to Greenbaum (1996), phrasal verbs are multi-word lexical verbs whose meaning cannot be inferred from the composing elements as more than one particle are combined to a verb (Hyun, 2009). Phrasal verbs are regarded as salient features in contemporary English and used more frequently than ever (McArthur,1992; Min & Park, 2008). More importantly, phrasal verbs have an important role in improvement of an English proficiency (Gardner & Davies, 2007) and are significant to intelligibility (Ahn, 2013, Min & Park, 2008).

However, despite Korean EFL learners' deficit knowledge and low capability on phrasal verbs as well as their confusion and difficulty on the process of phrasal verb learning, instruction of phrasal verbs has been neglected (Ahn, 2013). Calling for the necessity of instructing phrasal verbs, Min and Park (2008) studied distribution of phrasal verbs with high frequency, employing corpus analysis on 30 high school English textbooks. They extracted 29 phrasal

verbs which occurred more than 40 times in terms of their frequency from Biber, Johansson, Leech, Conrad and Finegan's (1999) Longman Grammar of Spoken and Written English. They found that phrasal verbs provided in the English textbooks in Korean high schools was not sufficient and adequate to learn and use. In conclusion, they proposed that phrasal verbs with high frequency rate should be provided to Korean high school students and instructed explicitly with their usage and multiple meanings.

However, their study had a limitation, given that they examined only the number and frequency of phrasal verbs provided in the textbooks in Korean high schools. More specifically, they did not investigate usages and intelligibility of Korean learners in the phrasal verbs. This limitation was partially overcome by Ahn (2013). Ahn (2013) analyzed the use of phrasal verbs by Korean learners to investigate the usage and errors made by them. She extracted 16 phrasal verbs with high frequency from Biber et al. (1999)'s Longman Grammar of Spoken and Written English and 48 phrasal verbs with high frequency from the research of Gardner and Davies (2007). She found that Korean EFL learners' capability to use phrasal verbs was very low and errors were frequently made even by high proficient learners. She also proposed that phrasal verbs should be instructed in the various contexts and that instructional methods should be developed to improve syntactic, pragmatic and semantic usage of phrasal verbs.

In spite of some research on the phrasal verbs, they did not pay attention

to reduced vowels in them. Given that phrasal verbs were found to play a significant role in intelligibility and reduced vowels were considered a factor that might be detrimental to intelligibility, it is essential to investigate phrasal verbs with reduced vowels in terms of intelligibility.

This is in line with Anderson-Hsieh, Johnson & Koehler (1992)'s claim that misplacing word stress badly compromises the intelligibility of L2 speech. Stressing one syllable, in turn, is accompanied by vowel reduction in one or more surrounding syllables (Ladefoged, 1975; Mackay, 1987). Therefore, several studies have attempted to evaluate how word stress and vowel reduction impact L2 learners' intelligibility, but results were not consistent. For example, Lepage and Busa (2014) explored how incorrect vowel reduction or incorrect word stress placement, alone or in combination, impacted intelligibility of Canadian French (CF) and Italian (I) L2 English. The participants were 32 native English talkers and listeners, 20 judges for Canadian French-accented English speech and 12 different judges for Italian-accented English speech. Using the speech samples of 184 two, three- and four-syllable English content (frequency-controlled) words which contained at least one reduced vowel, they found that even though misplacement of word stress was damaging to intelligibility, it was incorrect vowel reduction that was more detrimental.

Although the study revealed significant of vowel reduction in intelligibility, it could be criticized that the study failed to show how reduced

vowels can be detrimental to intelligibility as the participants' L1 was also a stressed-timed language just like English. Unlike English, vowels are not reduced in Korean since English is stress-timed language while Korean is syllable-timed language (Celce-Murcia, Brinton, & Goodwin, 2010). Thus, Korean L2 learners have difficulty pronouncing reduced vowels correctly and naturally unless they are instructed explicitly (Shin & Yoo , 2018).

Although some researchers did research on the phrasal verbs and reduced vowels, they were studied separately not in combination of them. Given that phrasal verbs were found a significant role in communication and reduced vowels were considered a factor that might be detrimental to intelligibility, it is essential to investigate phrasal verbs with reduced vowels in terms of intelligibility.

Chapter 3. Methodology

Chapter 3 describes the methodology of the experiment. Materials including talkers and stimuli are illustrated in Section 3.1. Participants and procedures are introduced in Section 3.2 and in Section 3.3 respectively. Section 3.4 provides how to analyze the data.

3.1 Materials

3.1.1 Talkers for Collecting Voice Recordings

Three talkers from two different language backgrounds were selected for collecting voice recordings in this study: one native English talker and two non-native Korean talkers. The Korean talkers were divided into two proficiency levels by the degree of foreign-accented English, low proficiency and high proficiency. Their accentedness was measured by the native English listener group who participated in the transcription task. All the talkers were females. Table 3.1 provides demographic information of the talkers.

Table 3.1

Demographic Information of the Talkers for Collecting Voice Recordings

Talkers	Age	L1	L2(y)*	LOR**	COR***	Gender
Native English talker	33	English	Korean (7)	7	Korea	Female
Non-native Korean talker	27	Korean	English (20)	2	America	Female
	32	Korean	English (8)	no	N/A	Female

L2(y)* = experiences of learning foreign language (year) LOR** = length of residence in a foreign country (year), COR*** = country of residence

3.1.1.1 Foreign Accentedness Judgment

Some previous studies used an accentedness judgment task to measure non-native Korean talkers' proficiency levels (Stibbard & Lee (2006); Hayes-Harb et al., 2008). In detail, non-native talkers with lower accented ratings were regarded as high proficiency levels in the L2. Taking one step further, Hayes-Harb et al. (2008) coined the term *phonological proficiency* to refer to the proficiency operationalized as accentedness. As one of the main concerns in the present study was the effect of proficiency on ISIB, the concept of phonological proficiency was taken from their study.

Speech samples produced by the non-native Korean talkers were presented to a group of 15 'judges', who rated the accentedness of each sample.

The judges were the participants in this study as the native English listeners and rated the accentedness of the talkers in a separate session. Following Kang (2010), the judges were presented the 20 speech samples in a random order and were asked to rate the accentedness of each talker on a 7-point Likert scale (1='no foreign accent' through 7='very strong foreign accent'). Data were collected from all judges online using the online site, Mturk, which was created by a cooperation of Google and Amazon (See Appendix A). The results of the task are presented in Table 3.2 below.

Table 3.2

Average Scores of Foreign Accentedness for the Talkers

Foreign accentedness (Mean)			
HP*		LP**	
Mean	SD	Mean	SD
2.26	0.70	6.53	0.51

Degree of foreign accentedness: likert 7 scales (1: no foreign accent or almost native, 7: very strong foreign accent)
HP*: Korean talkers of high proficiency, LP**: Korean talkers of low proficiency

One judged to have the weakest foreign accents was designated as 'non-native Korean talker of high proficiency (HP)'. In contrast, the other with the strongest foreign accents was designated as 'non-native Korean talker of low proficiency (LP)'. To ensure that the HP and LP talkers differed in their

accentedness ratings, an unpaired *t*-test with Welch's correction which allowed for the possibility of unequal variances between the two groups was carried out. It was confirmed that the HP (mean=2.26) and LP (mean=6.53) groups showed significant differences in accentedness ratings (Welch's t=8.253; df=1; $p<.05$).

3.1.2 Stimuli

Among phrasal verbs with reduced vowels, 10 phrasal verbs with high frequency were chosen: 6 from Biber et al. (1999)'s Longman Grammar of Spoken and Written English (*get ahead, get away, look ahead, run away, tag along, think about*) and 4 additional ones from Gardner and Davies (2007) (*come along, bring about, look around, turn around*). All of them included a reduced vowel, schwa. The phrasal verbs used here are presented in Table 3.3.

Table 3.3

The List of Phrasal Verbs as Stimuli for the Transcription Task

Phrasal verbs as stimuli
come along, bring about, get ahead, get away, look ahead, look around, run away, tag along, think about, turn around

A carrier sentence frame was taken from Lepage and Busa (2014), which was *I say 'X' again*. For example, *I say 'run away' again*. A total of 10 sentences

were constituted.

The native English talker and the non-native Korean talkers were recorded for the study. 10 phrasal verbs with the carrier frame were presented to the talkers in a random order. The talkers were given a carrier frame *I say 'X' again* and shown a phrasal verb that would be inserted in an *X* slot. After that, they were instructed to complete the sentence by combining two elements. A sample of this task is presented below:

Carrier sentence: *I say 'X' again.* (in a written format)

***Visual Prompt**: X=run away*

Utterance: *I say 'run away' again.* (in a spoken format)

This task for stimuli was likely to be more natural than a sentence reading task and a cognitive load was expected to be little. The utterances by three talkers were recorded using a GOM RECORDER program of version 2.0.0.7 in the wav format. Though a speaking rate was not controlled, they were asked to read the sentences aloud and as fast as normal speech. For better utterances, talkers were supposed to repeat the sentences three times per each. One of them with a good quality was chosen, excluding a few cases such as unnatural pauses, long hesitation and wrong pronunciation. A total of 30 utterances (10 utterances x 1 native English talker; 10 utterances x 1 nonnative

Korean talker with low proficiency; 10 utterances x 1 nonnative Korean talker with high proficiency) were collected. All of them were mixed in a random order and thus, one audio file was made up for the transcription task. Aside from the audio file, two more audio files were also made up from the non-native Korean talkers' speech for rating foreign accentedness illustrated in Section 3.1.1.1.

3.2 Participants

3.2.1 Native English Listeners

25 Native English listeners were recruited online. Considering age and faithfulness to the tasks, 15 of the pool of the 25 listeners were selected to act as listeners for this experiment. They were all born in America and had no experience to learn Korean except one. Their gender was mixed (11 males and 4 females) and the age range was from 28 to 42 (mean=33.4). They were required to answer the question how much they were familiar with Korean-accented English on a scale of 1 to 5 as follows: 1= not at all; 5=very much. All listeners were paid for their participation in the experiment. The demographic information of 15 native English listeners was shown below in Table 3.4.

Table 3.4

Demographic Information of the Native English Listeners

Listeners	Gender	Age(Mean)	L2 experiences*	DKA**(Mean)
N=15	11 male 4 female	33.4	6 no L2 experience 5 Spanish 1 Tagalog 1 German 2 French 1 Mandarine 2 Japanese 1 Hebrew 1 Korean	1.6

L2 experiences*: experiences to learn L2 other than English.
DKA**: Degree of familiarity with Korean-accented English

The native English listeners were asked to fill out the language background questionnaire (see Appendix B) via the online site, Mturk, before performing a transcription task

3.2.2 Non-native Korean Listeners

40 Non-native Korean listeners of high school students participated in this study. Those who were unfaithful to the listening test or the transcription task were excluded. A total of 30 non-native Korean listeners were selected from the pool of the 40 participants and they were divided into two groups, based on the results of the listening test: high proficiency level (n=15) and low proficiency level (n=15).

The non-native Korean listeners were required to fill out the language background questionnaire (see Appendix C). They were all born in Korea and had no experiences to stay more than one year in an English speaking country except one. Their gender was mixed (high proficiency; 8 males, 7 females, low proficiency; 13 males, 2 females) and their age range was from 16 to 18 (high proficiency; mean=16.6; low proficiency; mean=17.3). Table 3.5 presents the demographic information for the non-native Korean listeners.

Table 3. 5

Demographic Information of the Non-native Korean Listeners

Proficiency	Gender	Age (Mean)	YOE (Mean)*	DAA (Mean)**
HP	8 male 7 female	16.6	9.8	3.4
LP	13 male 2 female	17.3	8.7	2.5

YOE*: Years of learning English. DAA**: Degree of familiarity with native-accented English

3.2.2.1 Listening Test for Rating Proficiency Levels

The listening test was conducted for rating the non-native Korean listeners' proficiency levels. The non-native Korean listeners were asked to answer questions in the listening test taken from TOEIC part 2 (see Appendix D). For each question, they were supposed to listen to a statement and a question

followed by three possible responses spoken in English. They were not printed and only spoken one time. After listening to them, the non-native Korean listeners selected the best response and marked the corresponding letter. The listening test scores were ranged from 1 to 10. Non-native Korean listeners who got higher than score 6 were grouped as high proficiency listeners and those who got lower than score 5 were regarded as a group of low proficiency. The results of the test were shown in Table 3.6.

Table 3. 6

Average Scores of Listening Test in the Non-native Korean Listeners

Listening Test Scores			
HP (n=15)		LP (n=15)	
Mean	SD	Mean	SD
7.73	1.22	3.66	1.11

3.3 Procedure

3.3.1 Transcription Task

The voice recordings by the talkers were presented to the each group of the native English listeners and the non-native Korean listeners in the

transcription task (see Appendix E). They were required to listen to the recordings and then write down what they had heard in the English standard orthography. They were allowed to listen to them only one time and not to return to previous answers and rewrite them. All of the 30 sentences were given in a spoken form of "I say _____, again." format, which had been recorded by the native English talker and the non-native Korean talkers in a random order. In case they could not recognize the words or phrases at all, they only had to put "?" in the blank.

3.3.2 Word Familiarity Test

After completing the transcription task, a word familiarity test was administered to the listeners. The 10 phrasal verbs used in the study was presented to the listeners in written format and the listeners were asked to rate their familiarity on a four Likert scale taken from Sibbard and Lee (2006), as follow: 1='I don't know this phrasal verb'; 2='I recognize this phrasal verb but I don't know its meaning'; 3=I recognize this phrasal verbs but I am not sure about its meaning'; 4=I know this phrasal verb.' The target phrasal verbs were presented in standard American English orthography in written format (see Appendix E).

3.4 Data Analysis

3.4.1 Transcription Task Analysis

The transcription task scores were measured by a strict keyword-correct count. As the 30 utterances were used in the study, each speaker could receive a score from 0 to 30. Words with missing or added spellings as well as those with spelling errors were considered incorrect. Raw transcription scores were converted to a percent correct format. Then, the transcription task scores were submitted to one-way ANOVA. The statistical analysis was conducted with SPSS 25.0.

3.4.2 Word Familiarity Test Analysis

Raw transcription task scores and word familiarity test scores were submitted to Pearson R to calculate the correlation between the non-native Korean listeners' transcription scores and familiarity to the phrasal verbs used in the study.

Chapter 4. Results and Discussion

Chapter 4 reports the statistical results of the study. In Section 4.1, the results of word familiarity test are presented, followed by the analysis of the transcription scores and word familiarity test scores. The results from the transcription task by native English listeners and the non-native Korean listeners are provided in Section 4.2, and overall results are discussed in Section 4.3.

4.1 Word Familiarity Test Analysis

Data from the word familiarity test showed that the majority of the phrasal verbs were familiar to the non-native Korean listeners. Of the 10 phrasal verbs, only one phrasal verb was given average rating scores less than 3*: tag along* (2.36). Five phrasal verbs had average scores higher than 3.5: *run away* (3.86), *look around* (3.73), *turn around* (3.7) and all listeners gave the maximum rating of 4 to one phrasal verb: *think about* (4). Average scores of the word familiarity tests are presented in Table 4.1.

Table 4.1

Average Scores of the Word Familiarity Test

Phrasal Verbs	Mean	SD
Come along	3.06	0.82
Run away	3.86	0.50
Look around	3.73	0.63
Bring about	3.16	0.87
Get ahead	3.03	0.85
Tag along	2.36	0.88
Get away	3.4	0.81
Turn around	3.7	0.65
Think about	4	0
Look ahead	3.1	0.75

From the result, it was concluded that the non-native Korean listeners were highly familiar with the target phrasal verbs. The Pearson R analysis between the transcription accuracy scores and the word familiarity test revealed that a correlation between them was significant (rho=0.481, p=0.007). Thus, all analyses of the transcription task with the assumption that the non-native Korean listeners were all sufficiently familiar with the phrasal verbs to ensure that the

task provided a valid measure of their capability to perceive utterances by the talkers.

4.2 Transcription Accuracy Analysis

A total of 1,350 orthographically transcribed sentences (30 sentences by 45 listeners) from the task were elicited. Transcription accuracy scores of the non-native Korean listeners were computed for native English and non-native Korean talkers' audio stimuli of the sentences with phrasal verbs. They were used to assess the effect of ISIB for the native listeners and the non-native listeners. Scoring of the transcriptions was carried out using the exact-match method (Munro et al., 2006), which involved counting the words transcribed correctly in each utterance. Minor errors such as trivial substitutions, use of contractions, and use of abbreviated forms were counted as the correct answers, as they did not affect the meaning of the sentence. The mean transcription accuracy scores (percent words correct) for each group of listeners are provided in Table 4.2.

Table 4.2

Average Transcription Accuracy Scores (percent words correct)

Speaker	Listener	Mean (%)	SD
NE	NE	98.00	0.73
	HP	85.33	1.66
	LP	66.00	2.90
HP	NE	96.33	0.79
	HP	82.00	1.95
	LP	56.66	4.06
LP	NE	58.66	3.93
	HP	60.33	2.63
	LP	42.00	3.56

The one-way repeated ANOVA with three groups of listeners (the native English listeners, the non-native Korean listeners of high proficiency and the non-native Korean listeners of low proficiency) as a between-subjects variable and three talkers (the native English talker, the non-native Korean talker of high proficiency, the non-native Korean talker of low proficiency) as a within-subjects variable. The ANOVA yielded a significant main effects of the listener groups [$F(2,126)=28.239$, $p<0.001$] and the talkers [$F(2,126)=112.756$, $p<0.001$].

There was also a significant interaction between the talkers and the listener groups [$F(4,126)=5.741$, $p<0.001$]. ANOVA summary is presented in Table 4.3.

Table 4.3

ANOVA Summary Table

Source		SS	df	MS	F stat	Sig.
Within subjects (Listeners)	NE	593.733	2	296.867	58.427	.000
	HP	221.111	2	110.556	38.296	.000
	LP	175.644	2	87.822	22.017	.000
Between subject (Talkers × Listeners)	NE(talker)	311.644	2	155.822	39.680	.000
	HP(talker)	484.133	2	242.067	34.597	.000
	LP(talker)	123.333	2	61.667	5.270	.009
Total		1,909.598	12			

Post hoc pairwise comparisons (Bonferroni test) were conducted to evaluate effects of ISIB-T and ISIB-L. The transcription accuracy scores by non-native Korean listeners were compared for between the native English talker and the non-native Korean talkers (ISIB-T) and the transcription accuracy scores by the native English listeners, the non-native Korean listener for the non-native

Korean talkers (ISIB-L) separately.

4.2.1 ISIB-T by Talker and Listener Proficiency

As shown in Figure 4.1, the results indicated that the non-native Korean listeners' transcription accuracy scores for the native English talker' speech were higher than for the non-native Korean talker' speech. Most of all, for the non-native Korean listeners of high proficiency, speech from the native English talker was most intelligible (.85), which the non-native Korean talker' speech of high proficiency followed (.82). However, the difference of the transcription scores to the native English talker' speech and the non-native Korean talker's speech of high proficiency was not statistically significant, which showed that both of the two speeches were intelligible to the non-native Korean listeners of high proficiency.

On the contrary, the transcription accuracy scores of the non-native Korean listeners of high proficiency were significantly lower for speech from the non-native Korean talker of low proficiency (.60) than for the native English listeners ($p<0.05$), which indicated that speech by the non-native Korean talker of low proficiency was less intelligible to the non-native Korean listeners of high proficiency than speech by the native English talker.

For ISIB-T effect to hold true, transcription accuracy scores for the non-

native Korean talker of high proficiency should have been higher than those for the native English talker to the non-native Korean listeners of high proficiency. However, the results showed that the native English talker was most intelligible to the non-native Korean listeners of high proficiency, which suggested that ISIB-T did not hold true for them.

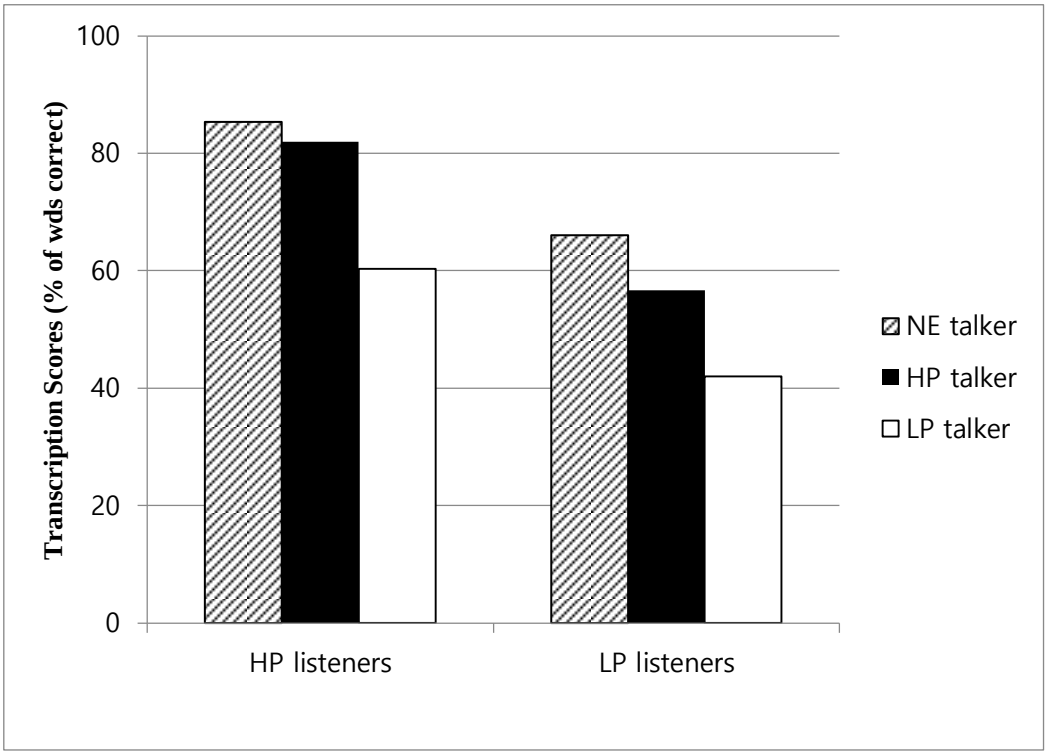


Figure 4.1. Comparisons of Average Transcription Accuracy Scores of the Non-native Korean Listeners for the NE, HP, and LP Talkers by Proficiency Levels: ISIB-T

For the non-native Korean listeners of low proficiency, speech from the native English talker is also most intelligible (.66), which speech of the non-

native Korean talker of high proficiency followed (.56). The difference of transcription scores for the two talkers was not significant ($p>0.05$), which implied that both of the two speeches were intelligible to the non-native Korean listeners of low proficiency alike.

In contrast, the transcription accuracy scores of the non-native Korean listeners of low proficiency were significantly low for the speech from non-native Korean talker of low proficiency (.42), which indicated that the non-native Korean talker of low proficiency was less intelligible than the native English talker ($p<0.05$). The results suggested that ISIB-T did not hold true for the non-native Korean listeners of low proficiency. The overall results for the effect of ISIB-T are described in Table 4.4.

Table 4.4

Overall Results of the Transcription Task Related to ISIB-T by Talker and Listener Proficiency Levels

	NE talker vs. HP talker	NE talker vs. LP talker
HP listeners	NE talker more intelligible than HP talker (no significant differences)	NE talker more intelligible than LP talker ($p<.05$)
LP listeners	NE talker more intelligible than HP talker (no significant differences)	NE talker more intelligible than LP talker ($p<.05$)

To sum up, as can be seen in Table 4.3, the evidence for ISIB-T was not

found for either the HP or the LP talker groups. Rather, the non-native Korean listeners found the native English talker's speech more intelligible than the other talkers' speeches. Of particular interest was that the non-native Korean listeners found native English talkers most intelligible regardless of their proficiency levels. In other words, ISIB-T did not hold true both for non-native Korean listeners of high proficiency and for non-native Korean listeners of low proficiency.

4.2.2 ISIB-L by Talker and Listener Proficiency

In order to explore a main effect of Interlanguage Speech Intelligibility Benefit of Listeners (ISIB-L), the transcription accuracy scores by the non-native Korean listeners were compared with those by the native English listeners for the non-native Korean talker. For the non-native Korean talkers, Figure 4.2 provides comparisons between the native English listeners and the non-native Korean listener groups.

For the non-native Korean talker of high proficiency, the transcription accuracy scores by the native English listeners (.96) were higher than all the non-native Korean listener groups. They were more accurate at the transcription task than the non-native Korean listeners of high proficiency (.82) and the difference was significant ($p<0.05$). Similarly, they showed higher transcription scores than

the non-native Korean listeners of low proficiency (.56) and provided significant differences ($p<0.05$). These results suggested that the non-native Korean listeners did not take advantage of the interlanguage benefit and thus the effect of ISIB-L was not elicited for the non-native Korean talker of high proficiency.

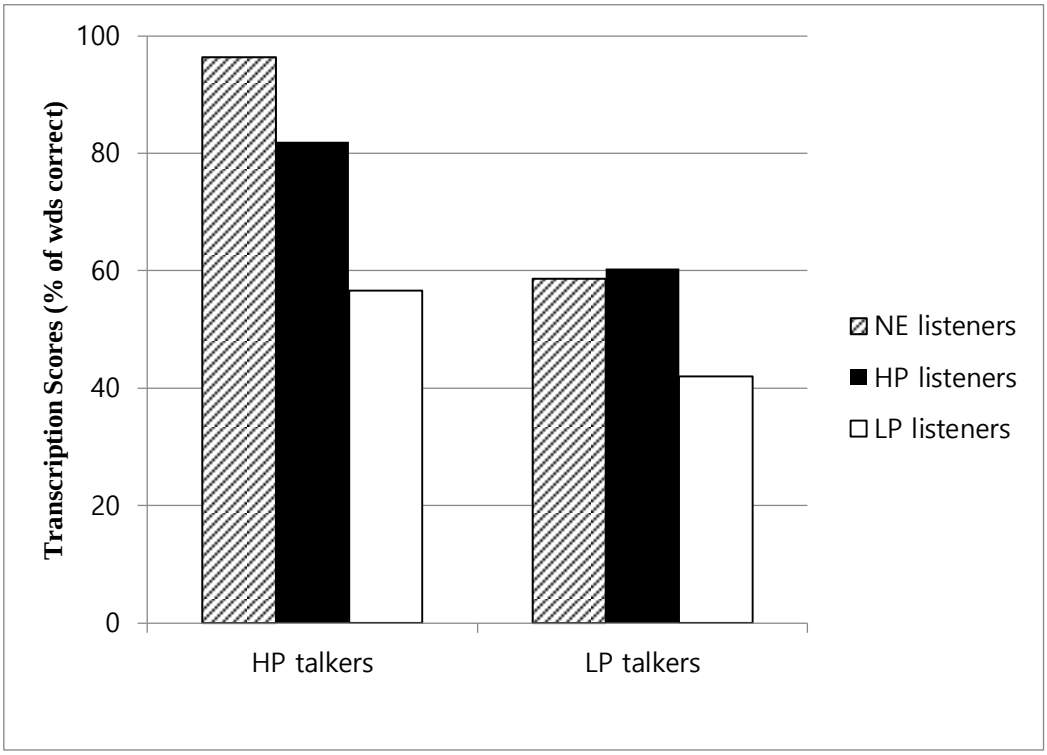


Figure 4.2. Comparisons of Average Transcription Accuracy Scores of the NE, HP, and LP Listeners for the Non-native Korean Talkers by Proficiency Levels: ISIB-L

For the speech samples from the non-native Korean talker of low proficiency, the transcription accuracy scores by the non-native English listeners

of high proficiency were highest in all the listener groups (.58). However, the difference between the non-native Korean listeners of high proficiency and the native English listeners (.60) was not significant (p=1.000), which implied that the intelligibility to the speech of non-native Korean talker of low proficiency was almost same to the two listener groups.

By contrast, the native English listeners were more accurate than the non-native Korean listeners of low proficiency (.42) and the difference was significant ($p<0.05$), which indicated that the non-native Korean talker of low proficiency was more intelligible to the native English listeners than to the non-native Korean listeners of low proficiency. These results indicated that ISIB-L did not hold true for them. The overall results for the effect of ISIB-L are described in Table 4.5.

Table 4.5

Overall Results of the Transcription Task Related to ISIB-L by Talker and Listener Proficiency Levels

	NE listeners vs. HP listeners	NE listeners vs. LP listeners
HP talker	NE listeners more accurate than HP listeners ($p<.05$)	NE listeners more accurate than LP listeners ($p<.05$)
LP talker	HP listeners more accurate than NE listeners (no significant differences)	NE listeners more accurate than LP listeners ($p<.05$)

In summary, the speeches by the non-native Koreans were not more intelligible to both the two listener groups than the native English listeners. Though, for the non-native Korean speaker's speech, the non-native Korean listeners of high proficiency were slightly higher than native English listeners, the difference was not significant. Thus, as the ANOVA showed, ISIB-L did not hold true both for the non-native Korean listeners of high proficiency and for the non-native Korean listeners of low proficiency.

4.3 Discussion on ISIB-T and ISIB-L

4.3.1 Influences of Proficiency on ISIB-T and ISIB-L

There may be several possible explanations for the lack of evidence for ISIB-T and ISIB-L in the present study. Most of all, the observation with no effect of ISIB-T in the current study is contrary to several previous findings (e.g., Bent & Bradlow, 2003; Major et al., 2002; Munro et al., 2006, van Wijngaarden, 2001; van Wijngaarden, Steeneken, & Houtgast, 2002), where non-native talkers' speech was more intelligible than native English talkers' speech to non-native listeners.

These conflicting results may be deprived from the fact that listener groups were not divided by their proficiency levels in the previous studies. For

example, Bent and Bradlow (2003) did not provide the proficiency of listener groups. The study made only speaking groups rated by foreign accentedness, which may be the reason why the findings of this study were different from theirs. As seen in Figure 4.3, in the case that the non-native Korean talkers' proficiency was low and listeners' proficiency was high, the non-native Korean listeners of high proficiency showed higher scores than the native English listeners in the current study, though the difference between two groups was not statically significant. This can explain the reason why ISIB seemed to be supported in several studies in which neither proficiency of talkers nor listeners was considered, despite of limited evidence (Algethami et al., 2011; Bent & Bradlow, 2003; Lee & Xue, 2013). In other words the discrepancy between non-native talkers and listeners, ISIB may appear to be supported.

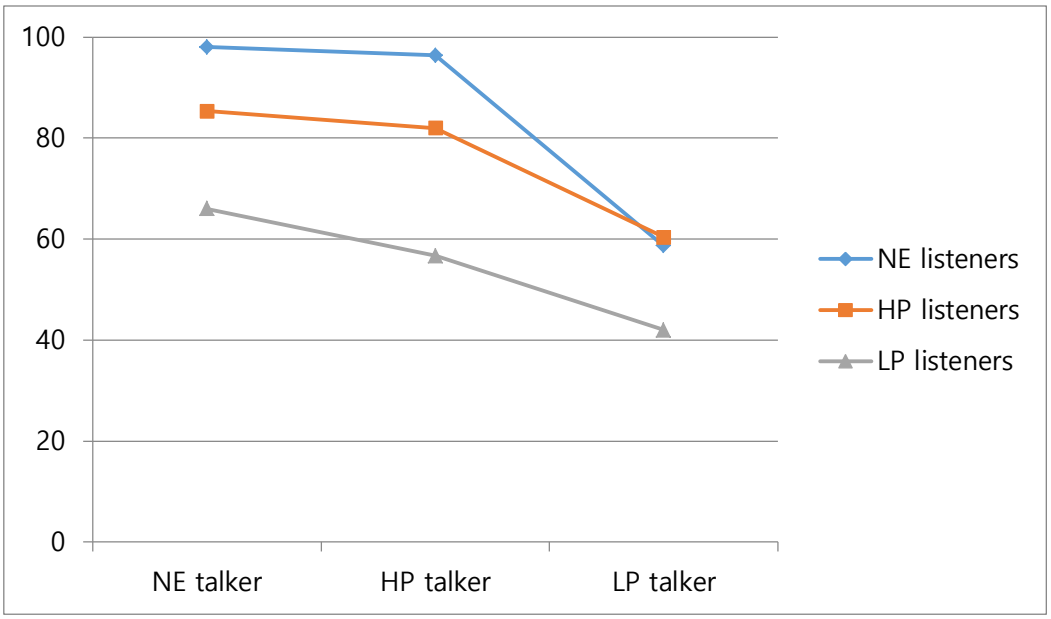


Figure 4.3. Comparison of Average Transcription Accuracy Scores between the Talkers and the Listeners by Proficiency Levels (%)

When it comes to the proficiency issue, it is also possible to assume the threshold of phonological proficiency. If proficiency levels of talkers and listeners are moderately low, they may take advantage of interalanguage benefits, whereas proficiency levels of talkers and listeners are severely low, they may not benefit from interlanguage. This assumption can explain the reason unlike the study of Hayes-Harb et al. (2008) which found the effect of ISIB-L, there was no evidence for the effect of ISIB-L in this study. Given that they found limited evidence for the non-native talkers and listeners of low proficiency, the discrepancy of proficiency levels of the talkers and listeners may not be high. That is to say, the lower is proficiency levels of non-native talkers and listeners,

the less evidence for ISIB there may be. On this ground, it is plausible to infer that proficiency levels non-native Korean talkers and listeners of low proficiency in this study was low enough to cross the threshold than those of the subjects of Hayes-Harb et al., which may lead to the different results.

In addition, the non-native Korean talker's speech of high proficiency was more intelligible than the non-native Korean talker's speech of low proficiency to both listener groups all the time with statistically significant difference. Moreover, for ISIB-L with the non-native Korean speech of high proficiency, the difference between native English listeners and non-native Korean listeners of high proficiency was statistically significant. These results imply that proficiency level of the non-native Korean speakers was important to the intelligibility, though the mechanism was not capable of being clearly explained

4.3.2 Considerations of Familiarity on ISIB

Familiarity is one of the factors which may influence ISIB research. In this study, one of the native English listeners, NE 5, learned Korean for one year. As shown in Figure 4.4, this listener showed the highest transcription scores for the non-native Korean talkers' speech, even for that of low proficiency.

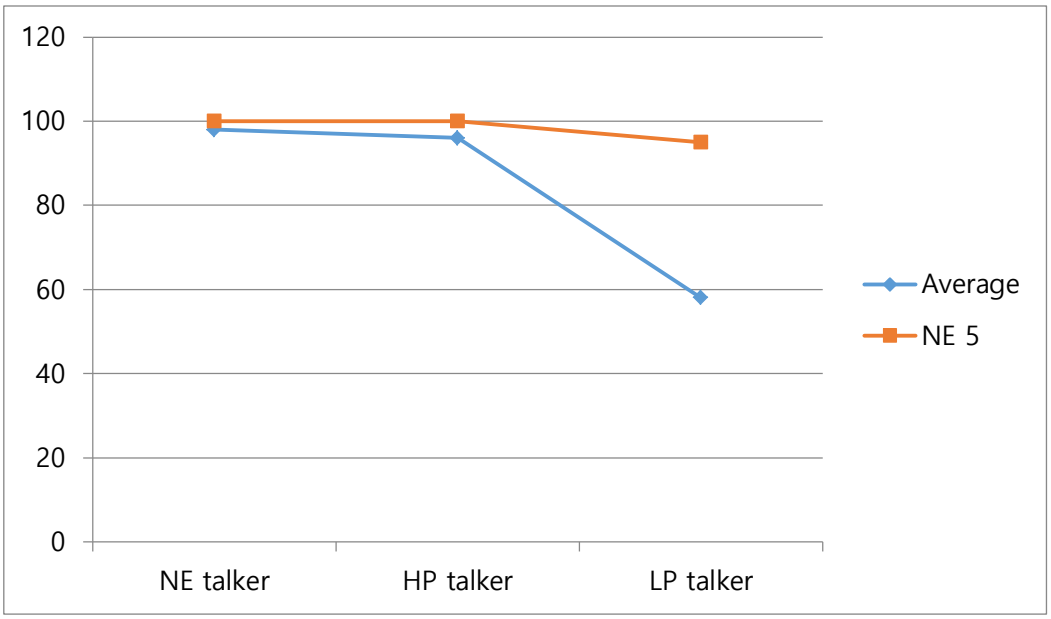


Figure 4.4. Comparison of Average Transcription Accuracy Scores between the Native English Listeners and NE 5 (%)

In addition, as seen in Figure 4.5, one of the non-native Korean listeners, HP 1, who had an experience staying in the United States for one year, showed the highest transcription scores for both the native English talker's speech and the non-native Korean talker's speech of high proficiency.

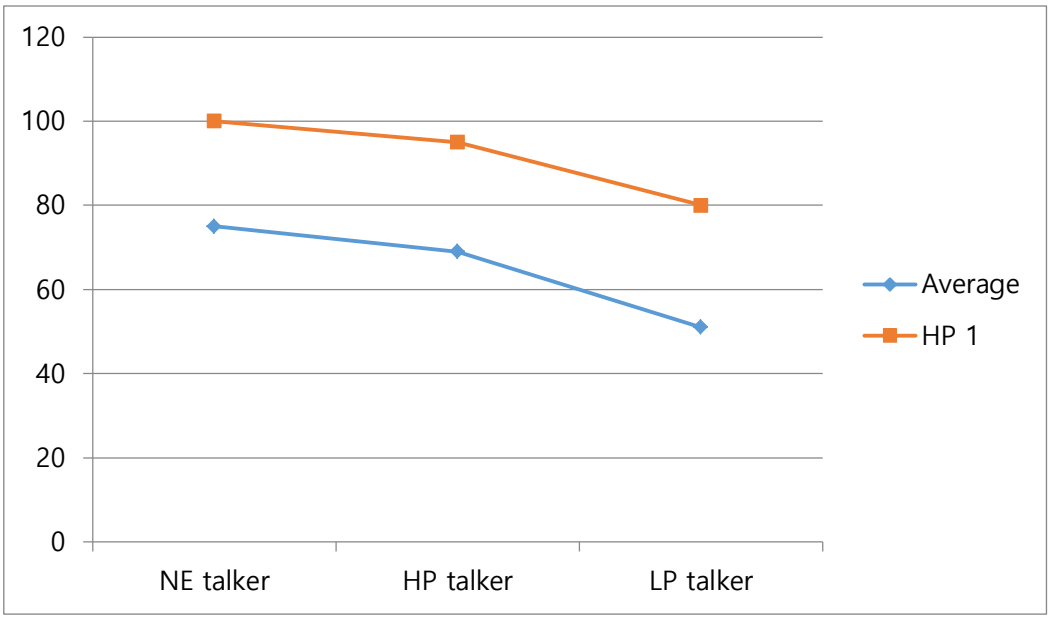


Figure 4.5. Comparison of Average Transcription Accuracy Scores between the Non-native Korean Listeners and HP 1 (%)

Unlike this study, evidence for the ISIB was found in a few studies. For instance, the studies of Bent and Bradlow (2003) and Stibbard and Lee (2006) found that talkers and listeners sharing the same L1 were more intelligible to each other than native English talkers and listeners. It is worth noting that these two studies were performed in English speaking countries, US and UK, respectively. In English speaking countries, L2 learners are likely to have abundant opportunities to be exposed to non-native talkers sharing the same first language and this may improve intelligibility of each other's speeches.

Similarly, Xie and Flower (2013) experimented with ISIB of the mandarin-speaking Chinese listeners in the US (M-US) and Mandarin listeners

in Beijing, China (M-BJ), and then showed ISIB-L for both listener groups and ISIB-T only for M-BJ. It is important to note that evidence for ISIB-T was not found in M-US. They attributed this phenomenon to the increased time of exposure to native-accented English, which made the benefit of interlanguage shared by the same L1 diminished.

Given that, unlike those studies, this study found no evidence for ISIB, this phenomenon can be explained by the fact that familiarity is another signficant factor for ISIB. Moreover, the results of those studies imply that, to benefit from the interlanguage shared by the same L1, it may be necessary to be exposed to the non-native accented English frequently and much enough to surpass the native-accented English. This explanation may be adopted to understand the difference between this study and the previous studies and beneficial to figure out the reason of no evidence for ISIB in this study. In other words, it may be implied that little did the non-native Korean listeners have enough opportunities to be exposed to Korean-accented English to benefit from interlanguage in this study. Thus, this may result in the lack of evidence for ISIB-T and ISIB-L in the present study.

4.3.3 Influences of L1 and Transfer on ISIB

According to Broselow et al. (1987), transfer plays a significant role in

the perception of L2. This theoretical background may explain why any ISIB was not found in this study. Despite the same first language shared by the participants, this study showed no evidence for ISIB. This finding of the study implies that features of L1, Korean, were not transferred at all or only partially transferred to L2, English and thus the non-native Korean listeners hardly gained benefit from interlanguage for L2 perception.

Unlike English, vowels are not reduced in Korean since English is stress-timed language while Korean is syllable-timed language (Celce-Murcia et al., 2010; Lim, 2016). According to Derwing and Munro (2015), this distinctive rhythm may prevent transfer of L1 to L2. In addition, though not explicitly stated, SLM implies that transfer occurs more for similar sounds than for dissimilar sounds (Major, 2008). Reduced vowels used here were a distinctive feature in English and thus transfer was not likely to occur.

Thus, the present study which revealed that there was neither on ISIB-T nor ISIB-L indicates that the phonetic properties of the L2 speech itself were strong determinants as to how L2 was perceived regardless of the listeners' native language. In other words, speech itself rather than interlanguage shared by the non-native Korean talkers and listeners may be a more critical factor in intelligibility as proposed in the several previous studies (Munro et al., 2006; Algethami et al., 2011)

Chapter 5. Conclusion

This chapter draws a conclusion of the current study from the experimental findings. In Section 5.1, main ideas and findings of the present study are summarized and brought together and pedagogical implications are suggested. In Section 5.2, limitations of the study and suggestions for improvement and further research are addressed.

5.1 Summary of Major Findings and Pedagogical Implications

The present study was designed to investigate the effect of ISIB-T and ISIB-L of Korean EFL learners, in consideration of their proficiency levels. The most intriguing finding in this study was the lack of evidence for ISIB-T and ISIB-L. The results of a transcription task indicated that the non-native Korean listeners found the native English talker's speech more intelligible than the other talkers' speeches regardless of their proficiency levels. In other words, ISIB-T did not hold true both for the non-native Korean listeners of high proficiency and for the non-native Korean listeners of low proficiency. In addition, the speeches by the non-native Koreans were not more intelligible to both the two listener groups than the native English listeners. Though, for the non-native Korean talker's speech, the non-native Korean listeners of high proficiency were slightly

higher than native English listeners, the difference was not significant. Thus, ISIB-L did not hold true both for the non-native Korean listeners of high proficiency and for the non-native Korean listeners of low proficiency.

The contribution of this study has been to confirm that ISIB-T and ISIB-L are separate phenomena and there is no evidence for ISIB-T and ISIB-L in the non-native Korean talkers and listeners in terms of phrasal verbs with a reduced vowel. The findings have significant pedagogical implications for teaching English pronunciation of reduced vowels in phrasal verbs. Despite the importance and difficulty of Korean high school students' production and perception of phrasal verbs with the reduced vowels in English (Shin & Yoo, 2018), more attention to them is needed to theoretically and practically researchers and teachers.

According to Bradlow and Bent (2008), native listeners can improve their perception of non-native talkers' speech with increased exposure and vice versa. L2 learners acquire more diversity in their phonological systems with experiences of the target language, which may made them improve familiarity with English and their L2 proficiency to higher levels. More importantly, to benefit from the interlanguage shared by the same L1, it may be necessary to be exposed to the non-native accented English frequently and much enough to surpass the native accented English.

Thus, considering the fact that Korea is an EFL setting and reduced

vowels are one of the factors which are detrimental to intelligibility and cause communication error, for the intelligible pronunciation instructions, English teachers need to realize its importance and be trained regularly. Also, they should explicitly instruct Korean EFL learners to be pronounced intelligibly. Most of all, teachers need to offer them enough opportunities to practice English in order to improve intelligibility to each other's speeches.

5.2 Limitations and Suggestions for Future Research

One source of weakness in this study which could have affected the result is that the present study which is in line with previous studies used carrier sentences and the transcription tasks used as conventional methods to investigate the effect of the ISIB. More recently, various tasks such as description a story and reaction time measurements have been suggested, other kinds of tasks could produce more convincing findings that may account for the mechanism and variables of ISIB. Another weakness of this study is the paucity of stimuli and speakers. A large number of stimuli, speakers and listeners could generalize the findings in a more persuasive manner in this study.

The findings of the present study provide the need for future research. Given that L1 knowledge can influence ISIB, experiments with participants from mixed L1 backgrounds could figure out the mechanism in relation to L1 and

ISIB. On a final note, in order to investigate how much efficient instruction or training for the phrasal verbs with in reduced vowels, a future study should also examine whether intelligibility level of nonnative speakers and listeners sharing the same interlanguage would be improved after the explicit instruction or training.

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Appendices

Appendix A: Foreign Accentedness Judgment Task

You will listen to 2 set of 10 second recordings. After listening to a whole set, rate a degree of foreign accent and comprehensibility for each one after another.

Rating Foreign Accentedness

1-1. Foreign accent rating from 1 to 7 *

	1	2	3	4	5	6	7	
no foreign accent or almost native	○	○	○	○	○	○	○	very strong foreign accent

Appendix B: Language Background Questionnaire for the Native English Listeners

Complete 10 language background questions below

1. What is your name? *

2. When is year of your birth? *

3. What is your sex? *

4. What is the highest degree or level of school you have completed? If currently enrolled, mark * the previous grade or highest degree received

5. Where were you born? *

6. How long did you live in your home country? *

7. What is your mother tongue? *

8. Have you traveled or lived in a non-English country? If so, how long and where? *

9. Are you used to listen to English with a Korean accent? *

10. Could you put all the languages you have ever learnt or spoken from most proficient to less proficient into the order? And esmiate your knowledge from 1(no knowledge anymoare) to 5(native-like proficiency)

Appendix C: Language Background Questionnaire for the Non-Native Korean Listeners

Language Background Questionnaire

1. What is your Name? _____

2. What grade are you in? _____

3. What is your sex?
□ Male
□ Female

4. Where were you born?
Country: _____

5. How long did you live in your home country?
_____ Years

6. What is your native language (mother tongue)?
_____

7. How many years have you learnt English?
_____ Years

8. Have you traveled or lived in an English speaking country? If so, how long and where?
_____ Years / month in _____

9. Are you used to listen to English with an American accent?

Not at all		From time to time		Very much
1	2	3	4	5

Appendix D: Listening Test for Rating Proficiency Levels

Listening Test

For each question, you will listen to a statement or question followed by three possible responses spoken in English. They will not be printed and will only be spoken one time. Select the best response and mark the corresponding letter (A), (B), or (C) on your answer sheet

1. Mark your answer on your answer sheet.

   (A) (B) (C)

2. Mark your answer on your answer sheet.

   (A) (B) (C)

3. Mark your answer on your answer sheet.

   (A) (B) (C)

4. Mark your answer on your answer sheet.

   (A) (B) (C)

5. Mark your answer on your answer sheet.

   (A) (B) (C)

6. Mark your answer on your answer sheet.

   (A) (B) (C)

7. Mark your answer on your answer sheet.

   (A) (B) (C)

8. Mark your answer on your answer sheet.

   (A) (B) (C)

9. Mark your answer on your answer sheet.

   (A) (B) (C)

10. Mark your answer on your answer sheet.

    (A) (B) (C)

Appendix E: A Transcription Task

In section2, you will listen to the recording (press "play" of the video below, and remain it played till the end of the survey), and write down what you've heard using standard English orthography. You can hear them one time (!Do not return to previous answers and rewrite your answers!)

There will be 30 sentences and all sentences are in "I say _____, again." format.
Please pay attention to the blank and please transcribe what you've heard.
Example) Q1. I say _____, again.
Your answer would be.... put off / put of / putof / puruf / proof etc.
The word/phrases for the blank may be either a proper word or a nonce word. Try to transcribe what you've heard, and your honest answer is much appreciated. You only have to transcribe what you you've heard one time!

Put "?" in case you cannot recognize the word/phrases at all even though the quality of recordings is fine.
Put "X" in case you cannot transcribe due to the poor recording quality (too small volume, etc.)

section2 Transcription Task

1. *

단답형 텍스트

Appendix F: Word Familiarity Test

Choose one of the options for each phrasal verbs.
Meanings for each option are following:

1='I don't know this phrasal verb'
2='I recognize this phrasal verb but I don't know its meaning'
3=I recognize this phrasal verbs but I am not sure about its meaning'
4=I know this phrasal verb.'

1. Come along
   □1 □ 2 □ 3 □ 4

2. Bring about
   □1 □ 2 □ 3 □ 4

3. Get ahead
   □1 □ 2 □ 3 □ 4

4. Get away
   □1 □ 2 □ 3 □ 4

5. Look ahead
   □1 □ 2 □ 3 □ 4

6. Look around
   □1 □ 2 □ 3 □ 4

7. Run away
   □1 □ 2 □ 3 □ 4

8. Tag along
   □1 □ 2 □ 3 □ 4

9. Think about
   □1 □ 2 □ 3 □ 4

10. Turn around
    □1 □ 2 □ 3 □ 4

국 문 초 록

한국인 영어 학습자들의 중간언어 발음이개도 양상 연구:

영어 구동사를 중심으로

김 사 영

외국어교육과 영어전공

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원어민의 발화보다 비원어민의 발화가 동일한 L1 을 사용하는 비원어민의 청자에게 더 쉽게 인지되는 현상을 가리켜 Interlanguage Speech Intelligibility Benefit (ISIB)라고 한다 (Bent & Bradlow, 2003). ISIB 는 이후 ISIB-T 와 ISIB-L 이라는 두 가지 하위 유형으로 정교하게 세분되었다 (Hayes-Harb et al., 2008). 그간, ISIB 에 대해 많은 연구가 수행되어 왔지만, 일관성 있는 결과를 보여주지는 못했다. 일부 연구는 ISIB 효과를 입증했지만, 다른 연구들은 그렇지 못했거나 매우 제한된 증거만을 발견했을 뿐이다.

이렇듯, 일관성이 결여된 결과는 다양한 언어 배경이 ISIB 연구에 영향을 미친다는 사실을 암시해준다. 따라서 본 연구는 ISIB 효과를 분명하게 검증하기 위해, 한국인 EFL 학습자들을 대상으로 연구를 진행했다. 나아가, ISIB 에 대한 보다 명확한 이해를 위해, 본 연구는 화자에 대한

발음이개도(ISIB-T)와 청자에 대한 발음이개도(ISIB-L)를 구별된 현상으로 다루어 연구하는 것을 주된 목적으로 삼았다.

약모음이 포함된 구동사 중에서 전사 과업에 사용될 고빈도 구동사 10 개를 선택해, 영어 원어민 화자, 고능숙도 수준의 한국인 비원어민 화자, 저능숙도 수준의 한국인 비원어민 화자를 발화 문장 수집을 위해 모집하였다. 실험에 참여할 청자 그룹으로, 영어 원어민 청자, 고능숙도 수준의 한국인 비원어민 청자, 저능숙도 수준의 한국인 비원어민 청자가 모집되었다. ISIB-T 와 ISIB-L 에 있어서 화자와 청자의 능숙도 수준이 미치는 영향력을 살펴보기 위해, 실험결과를 능숙도 수준에 따라 일원배치 분산분석(ANOVA)으로 분석하였다.

분석 결과, 영어 원어민 화자에 의한 발화가 한국인 비원어민에 의한 발화보다, 한국인 비원어민 청자들에게 높은 이해도를 보이는 것으로 드러나, ISIB-T 효과는 입증되지 않았다. 한국인 비원어민의 발화 역시 한국인 비원어민 청자보다는 영어 원어민 화자에게 더 높은 이해도를 보여 ISIB-L 효과 또한 검증되지 않았다. 화자와 청자의 능숙도 수준을 고려했을 때, 이러한 결과는 한국인 비원어민 화자와 청자의 능숙도 수준에 영향을 받지 않는다는 사실이 발견되었다.

본 연구의 발견은 한국인 EFL 학습자들이 발음이개도에 있어서 중간언어를 활용하지 않는다는 것을 암시한다. 하지만, 한국인 비원어민 청자가 영어 원어민 청자와 큰 차이를 보이지는 않았다는 점을 고려할 때, 한국인 EFL 학습자들이 L2 에 대한 능숙도 수준을 향상시킴으로써

발음이개도를 개선할 수 있을 것으로 기대된다. 그러므로, 약모음을 포함한 구동사를 한국인 EFL 학습자들에게 명시적으로 가르칠 필요성이 대두된다. 이와 함께, 상호간의 이해도를 높이기 위해 구동사를 연습할 풍부한 기회를 제공할 필요가 있겠다.

주요어: 발음이개도, 구동사, 약모음, 인지도, 원어민, 비원어민, 운율, 능숙도

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